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ABSTRACT

This article is part of an informational kit for teachers published by the New Zealand Council for Educational Research. The focus of this article is on the advantages and disadvantages of co-educational and single-sex secondary schools as discussed in research efforts from England and New Zealand. (JLL)

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Attainment and Adjustment in Adolescence: Co-educational or Single-sex Schools?

set 76
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Co-educational or Single-sex Schools? A review of the Literature

by James Irving

Considering the world wide trend towards co-educational secondary schooling since the Second World War, it is surprising that the question of co-education has remained a subject for research. Over the past 50 years English researchers have shown the most consistent interest in this topic and the movement towards co-educational comprehensive schools in that country, especially over the past decade, has provoked more interest and enlivened the debate. The English research has focussed mainly on evaluating the advantages and disadvantages of co-educational or single-sex schools, but there is also the wider social question of the changing roles of women in society, changes that challenge the old dichotomy of separate educational facilities and programmes for boys and girls. For example, when Sweden decided 30 years ago to abolish segregation, the decision was taken largely on social grounds. The arguments were based on equality of opportunity and equality of the sexes, the Swedes having already decided that there was no academic justification for segregation. It is probably the wide acceptance of the Swedish arguments that has influenced the world wide trend towards co-education rather than the more specific English research on the subject. The English research on co-education does, nonetheless, have continuing interest for New Zealand educators because of the considerable English influence on our education system. This is particularly true in relation to secondary education with the early establishment and continued existence of 'elite' single-sex secondary schools in larger centres.

The English Research Evidence

Most of the research on co-education falls into three broad areas: comparisons of academic attainment between single-sex and co-educational schools; comparisons of social-emotional atmosphere and adjustment; and opinion survey of various types.

R.R. Dale has been by far the most active researcher into the various dimensions of co-educational versus single-sex schools. Some of his findings, together with summaries of other research in the field, first appeared in a number of articles published in the 1950s and 1960s. During these years Dale was working towards the publication of a major three-volume study, **Mixed or Single-sex School?** Vol. I, **A Research Study in Pupil-Teacher Relationships** (1969); Vol. II, **Some Social Aspects** (1971); Vol. III, **Attainment, Attitudes and Overview** (1974).

The broad conclusion that emerged from Dale's research, and the other studies he cited, was that co-educational secondary schools were at no significant disadvantage in any single area or with any single group. Students and teachers who had experienced both forms of education were almost always the strongest supporters of co-education.

Dale's findings from his first two volumes clearly indicated that co-educational secondary schools were generally happier, more lively and more humane places than single-sex schools. They were less aggressive places, and had much pleasanter atmospheres, a reflection on the generally better relationships both between pupils and between staff and pupils. Academic attainment, too, tended to be higher, and certainly not lower than in single-sex schools, although this finding appeared to be more clear cut for boys than girls.

The third volume focussed mainly on comparing the academic progress of pupils of near equal ability in co-educational and single-sex secondary schools. This is important in view of the common assumption that single-sex schools are superior academically. This belief is based on their supposed academic superiority in examination results and scholarship places, and helps to explain their continued survival. Dale suggested that where differences exist in favour of the segregated schools, these could largely be accounted for by the 'creaming off' of able pupils by older established, 'elite' schools. The overall conclusion that emerged once again was that with pupils of matched ability, general attainment was higher in co-educational schools. This trend was very clear for boys, an outcome of co-education which Dale attributed to the friendly rivalry with girls and the influence of the greater conscientiousness of the girls. In his opinion, the presence of girls provided an added dimension to subjects such as literature and history. For the attainment of girls, however, the evidence was somewhat less convincing.

Dale then went on in Volume III to a more detailed consideration of differences in mathematical attainment. The same general conclusions in favour of co-educational schools are apparent, although, again, the evidence for girls is much less clear cut. Dale suggested that the greater difficulty in finding mathematics teachers for co-educational and girls schools might explain the differences in the girls' results. But this is questionable since it is hard to explain why, despite having less qualified teachers, boys in co-educational schools continued to perform better in mathematics than those in single-sex schools.

As well as considering his own evidence, Dale's third volume also provides a summary of all the surveys in comparative attainment which began in the 1920s. Finally, he concludes Volume III with a useful overview of the three volumes, providing readers with a convenient summary of his research findings.

Dale is, of course, not without his critics, and there also exists in England a very strong vested interest in maintaining single-sex schools, many of them elite schools with hallowed traditions. A common criticism is that the great majority of Dale's evidence is derived from grammar schools only. Considering the long time span of the study this is understandable, but, nevertheless, it must be borne in mind that he is describing schools that differ fundamentally from the rapidly growing number of comprehensive secondary schools now in existence.

The time factor gives rise to another cause for concern in evaluating Dale's evidence. What is the validity of studies done as much as 50 years ago, the most up-to-date only as recently as 1968, and that in Northern Ireland? The point is well brought out in a critique by R.

Wood and C. Ferguson (1974), who question Dale's finding that 16-year-olds at co-educational schools are as good or better in examinations than those in single-sex schools. They point out that Dale's evidence is not current and that there is too strong an element of 'special pleading' permeating his work.

Wood and Ferguson checked Dale's claims against 1973 data based on a large number of pupils (100,000) taking London University GCE O Level examinations. Grammar and comprehensive school results were analysed separately. Using this contemporary data Wood and Ferguson were unable to confirm Dale's findings in support of superior academic results for pupils educated in co-educational schools. The tendencies were there in the comprehensive schools but not much else. There was nothing to support the marked superiority of co-educated boys in mathematics and the grammar school figures showed that segregated boys out performed co-educated boys in more than half the subjects, particularly in number of A grades. Wood and Ferguson were not suggesting that the arguments for or against co-education should be based on academic results alone, but that if one is going to use academic results to substantiate a case for co-education, then such results should be as up-to-date and relevant as possible.

On the question of whether co-education breaks down traditional sex-typing of subjects, Wood and Ferguson found little evidence to support this relaxation in mixed grammar schools. They did find, however, that sex-linked subject allegiance appeared weaker in mixed comprehensive schools. This finding would support recent research on comprehensives by G. Neave (1975) which suggests that pupils in these schools are more likely to resist premature specialisation.

A recent study of boarding school education in England by Royston Lambert and associates (1975), summarised in this issue of **set**, provides some further interesting evidence on the subject of co-education. The authors show co-education to be a minority aspect of boarding, occurring mainly in schools which are socially integrated or state controlled, or those adopting the progressive philosophy. Although largely absent from public schools, even in these a few co-educational footholds have been gained in the 1970s. Three distinct kinds of co-eductional schools emerged from the Lambert sample. The first group of schools being a divided community, in effect, two separate schools; the second group, more freely integrated with the sexes mixing freely in what the authors called 'egalitarian' or 'radical' communities; the third group, a mixed kind of co-education, fell between the extremes of the first two. The authors found that the radical progressive school won a higher commitment from pupils in a residential setting than any other school. They found these schools to be unique at the secondary level in their approach to the child, their freedom, their co-educational living, the wide extent of decision-making, and in the quality and closeness of staff-pupil relations. Not surprisingly then, these schools emerged as the most effective pastorally of all those sampled.

In considering some of the effects of boarding on personality, in particular emotional and sexual life, Lambert and his colleagues found that boys living in co-educational schools felt themselves to be more adjusted and at ease with members of the opposite sex than those in single-sex schools. The boys' writing, interviews and discussion with the researchers recorded, indicated much less sexual imagery, reference to or preoccupation with sex in the co-educational schools than in single-sex. Boarders at boys' schools appeared to be the most lacking in self assurance with girls even when compared with day boys from the same or similar single-sex schools. Significant, too, was the reaction to members of their own sex. When the authors' samples of sixth-formers used for intensive study were asked to state the least desirable effects of single-sex education, the most frequently mentioned one (among several others) was the tendency to increase homosexual feelings. Open ended questions on personal worries also showed a substantial minority with deep personal concern about homosexuality. In other words, there appeared to be a greater sensitization to their own sex and to homosexual situations in the single-sex boarding schools. Conversely, the sample of boys in co-educational schools showed an absence of concern in these areas.

The evidence of Lambert and his associates on the better emotional climate of co-educational boarding schools does support Dale's findings, on co-educational day schools, but the researchers stress the dangers of deducing deeper, long-term effects of co-educational boarding schools given the absence of facts on the subsequent lives of boarders. Indeed, even the more substantial long-term evidence cited by Dale in favour of the co-educational day setting is viewed with some scepticism by Lambert. Thus, evidence relating to the greater marital stability and happiness of the products of co-educational schools is criticised because of faulty sampling and the considerable technical obstacles to the acceptance of such conclusions on the basis of objective research evidence.

Although the overall weight of the English evidence appears to favour co-educational schools, the causal factors which give this apparent superiority are not clear. This is a major weakness of the research evidence; there is too much looking for simple associations between variables and a consequent lack of rigorous analyses of all the factors involved. There is a clear need for a more thorough background in educational and sociological theory with more rigid control of such factors as socio-economic status of parents, pupil I.Q., class size and organization, school size and organization, educational backgrounds of teachers, sex of teachers, and probably a number of other variables as well. For all these factors to be held constant, plus the sex variable in co-educational schools, a very complex study would be needed. Given the complexity of the variables perhaps it is not really possible, and given the present trends in education and society maybe it is not really necessary that such a study need be made.

It is, however, interesting to note the findings of a recent investigation by P. McC. Miller and Dale (1974). They found that individuals who were matched for sex, social class, A-level performance, and a number of other variables thought likely to influence university performance, achieved practically the same results regardless of whether they attended a co-educational or single-sex secondary school. The only evidence favouring co-educated students was that they appeared to make a

better initial adjustment to university. This last finding does offer support for a statement made by Dale (1975) in a recent article on education and sex roles:

> Education is not only about academic achievement; pupils are unconsciously acquiring social skills and attitudes, and are affected emotionally by their various experiences. In a co-educational school, they are, by working with the opposite sex in the classroom and sharing in hobbies, drama and choir, learning the attitudes, characteristic behaviour, skills, strength and weaknesses of the opposite sex.

The New Zealand Case

In this country single-sex secondary schooling grew out of the British tradition of academic secondary education for boys and reflected Victorian values, in particular a belief that education for girls was not important and should be provided separately from the education of boys and be markedly different both in quality and kind. Another point worth noting is that secondary education originally existed only for an elite. Segregation of the sexes also reflected the prevailing Victorian puritanism and prudishness in public attitudes towards sex, attitudes which still have their influence today. The pattern which resulted was for elite single-sex secondary schools in the main centres, as well as technical schools, of lower prestige, for a wider ability group not catered for in the academic schools. These technical schools became co-educational schools and were generally more liberal and progressive in outlook. In country areas secondary schools were established as co-educational schools for reasons of administrative convenience and economy.

By the 1940s a great change in the function of secondary schools had occurred. The Thomas Committee had ushered in the core curriculum; in 1943 the school leaving age was raised to 15. These changes, which in turn reflected broader changes within society itself, meant that secondary schools took on the much more significant role of educating all children rather than an academic elite.

Not surprisingly, the issue of co-education began to raise its head. F.W. Hart, a visiting American educationist at the NEF Conference in 1937, viewed segregation as one of the main evils of New Zealand secondary school education. He wrote that 'if a function of education is the social adjustment of the individual, then there can be no defensible grounds established for the segregation of boys and girls of adolescent age. Social adjustment ... cannot be achieved under conditions of segregation.'

The first real research evidence on co-education appeared in the survey **High Schools of New Zealand**, by J.H. Murdoch (1943). A questionnaire to teachers in high schools showed a considerable lack of agreement as to the type of school preferred, separate, mixed with separate classes, mixed with mixed classes. The general tendency was for teachers to prefer the type of school they knew and were actually teaching in. Many teachers recognized the educational claims for co-education, but preferred separate schools on administrative grounds. Worthy of note was the common criticism of mixed schools with separate classes.

Murdoch also gave a further and more detailed questionnaire to teachers college students in two cities, in one instance to students of three successive years. In every year and in both cities a majority, usually quite overwhelming, of men and women students favoured the co-educational secondary school with mixed classes. Most tentative, though still in favour of mixed schools, were ex-pupils of large girls' secondary schools. Respondents favouring mixed schools noted the generally happier and less rigid environment of the co-educational school, each sex having a beneficial

influence on the other. It was felt that such schools provided a better preparation for adult social life, but not at the expense of educational advantages.

The 1950s saw the post-war 'baby boom' which necessitated an expansion in the secondary building programme, an expansion which brought the issue of co-education even more to the fore. The attitude of the Department of Education at this time was generally to allow co-educational schools in large centres to divide into separate schools when the rolls became too great. Newly established schools, however, were usually co-educational. This practice of allowing co-educational schools to divide caused some heated local debate with opinions and statements for and against reflecting much polemical special pleading but little reference to objective research evidence. H.A.H. Insull's paper **Marlborough College at the Crossroads** (1949), is an example of this type of statement.

In the midst of this debate came the publication of the Mazengarb Report on **Moral Delinquency in Children and Adolescents** (1954). In part, this committee was formed in response to the hearing of adolescent immorality charges in the Court at Lower Hutt. The prosecuting officer felt that the association of boys and girls in co-educational schools was a contributing factor to their delinquency, a view shared by many in the community. Although the Committee investigated these charges that co-educational schools increased the chances of immorality, no evidence was found that acts of immorality among pupils arose from their mixing at school.

Parental opinion remained an important issue throughout the 1950s and prompted further research into co-education by R.H.T. Thompson (1957), who carried out a survey on behalf of the Christchurch Post-Primary Schools' Council following criticism that the Council had received for its policy of building co-educational secondary schools in the suburbs. The critics claimed that such a policy failed to take into account the preferences of the great majority of parents in favour of single-sex schools.

A sample survey was carried out by Thompson in 1956, focussing on two questions: first, the preference of parents for co-educational or single-sex secondary schools; second, the extent to which parental opinion on the issue of co-education or single-sex schools influenced their decision on the choice of secondary school for their children.

Of the 224 parents interviewed Thompson found that 78 favoured single-sex schools, 79 co-educational, with 67 expressing no preference. However, in only about 12 per cent of the sample was the stated preference a deciding factor in school choice. Parents seemed to think in terms of the needs of the individual child and the advantages of particular schools rather than in terms of co-education or not. When making a choice of school the most decisive factors were closeness of the school and the kind of courses offered. An interesting fact which emerged was that parents who had a preference for either co-educational or single-sex schools both used the characteristics of adolescence to justify their opposing viewpoints. Another interesting trend emerged when parents were classified in terms of the 7-point Congalton-Havighurst scale of occupational status. Nearly 75 per cent of parents applying for co-educational schools came from the three lowest ranks on the scale, as against just over 50 per cent for parents applying for single-sex schools. For the three top occupational ranks the figures were less than 8 per cent for co-educational schools and 25 per cent for single-sex schools.

The publication of D.P. Ausubel's **The Fern and the Tiki** (1960), saw another visiting American educationist entering the debate on co-education. Ausubel had several critical things to say about New Zealand secondary schools, including such things as school environment and discipline, and he was particularly critical of the prevailing attitudes and practices with respect to co-education. In support of his strong plea in favour of co-education he cited the psychological evidence on the need for adolescents to learn how to mix properly and normally with members of the opposite sex, this being one of the major developmental tasks of adolescence. He felt that much of what he saw in New Zealand single-sex secondary schools was inimical to this normal development, and that as a consequence adolescent boys and girls tended to be ill at ease and awkward in each other's company.

In the light of the New Zealand evidence and argument already discussed it seems a pity that the Commission on Education (1962) saw fit to make no recommendation on the question of co-educational and single-sex schools and devoted less than a page (p.222) to discussing the matter. The Commission did, however, endorse the departmental view that no further segregated schools should be established without very strong grounds, a view based on staffing and cost considerations rather than research evidence. The Commission was inclined to the view that the matter was of much less ultimate importance than suggested by the debate upon it, and that on the whole there were no really important differences between the two types of school. The English evidence on the different social-emotional climates of the respective schools makes this view at least questionable. The Commission went on to say, 'in a community where the sexes mix freely, and all state primary schools are co-educational, it seems ... that the importance of either segregation or association of the sexes during the school day can be overrated'. It is, of course, a moot point as to whether the sexes do mix freely in our society.

Phoebe Meikle, in a critique of the Commission's report (1964), took issue with its stated views on co-education. She questioned whether the sexes mix as freely as implied by the Commission, and, drawing on her wide experience with both types of school, pointed to the better social-emotional climate of co-educational schools and their generally more relaxed atmosphere. She went on to cite a later statement in the Commission's Report (p.298) which she felt was incompatible with its views on co-education. 'It is well understood that as the pupil is still a child or adolescent, at least until the senior secondary stage, the school is one of (the pupil's) most important training grounds in human relations'. In Meikle's opinion this is a strong argument in favour of co-education, and it does seem difficult to reconcile this view of the Commission with its earlier rather bland statements on co-education.

At this point it is of interest to quote a statement in support of co-education from W.B. Sutch (1961) in his

submission to the Commission on Education:

> An essential element in providing children with a balanced environment where they are treated as responsible people is co-education.

Sutch listed three main fields favouring co-education, social, educational and economic. His support for the social and educational advantages followed along similar lines to points already considered in this paper. His economic argument raised such factors as conservation of resources, better use of facilities, especially laboratories, and greater utilisation of specialist staff, especially for the teaching of girls.

Recent Research in New Zealand

More recent New Zealand research has become available in the form of two unpublished theses; one by A.J. Mack (1962), dealing specifically with co-education, the other by J. Bunce (1970), dealing with differences in subject choices of secondary school boys and girls.

Mack's research compared academic attainment between co-educational and single-sex schools, on the basis of School Certificate, University Scholarships and first-year university results. For School Certificate, using results from 57 co-educational and 22 single-sex secondary schools over a five-year period, Mack found mean percentages of passes were 57.26 for single-sex schools and 51.22 for co-educational schools. Some individual co-educational schools did achieve results as good as those from any of the single-sex schools, but in no single year was the overall result for the co-educational schools superior. A similar pattern emerged for University Scholarship results. For the whole of New Zealand, single-sex schools gained an average of 8.2 places, co-educational schools 2.6, and private schools 1.6. A much larger percentage of state single-sex schools were, in the scholarship list, 58.3 per cent as against 17.4 per cent for state co-educational schools, but the actual number of schools was much closer, 28 and 21 respectively. When the ten highest schools were ranked, state boys' schools came first, second, third, sixth and ninth; boys' private schools came fourth and seventh; state girls' schools came eighth and tenth, and a state co-educational school was fifth.

There are, however, important qualifications which need to be made about these results.

In the first place, co-educational schools make up a much larger proportion of the total secondary schools in New Zealand and are spread much more widely throughout the community, including smaller towns and rural areas. At the time of Mack's study there were 121 state co-educational schools as against 48 single-sex schools. The present totals are 190 co-educational schools (not counting 31 DHS, 9 Re-organised DHS and 3 Area Schools), and 51 single-sex schools accounting for about 25 per cent of the total state secondary school enrolments. In addition, there are 108 private secondary schools, all but nine single-sex. Including private and state secondary schools the total population in single-sex schools is now about 35 per cent of those attending secondary school.

These figures mean that co-educational secondary schools represent a much wider range of ability than the largely city-based single-sex schools. There is ample evidence to show that the average I.Q. of urban children is higher than that of rural children, and furthermore, higher socio-economic status of parents (in turn correlating highly with I.Q.) would appear to be an important factor favouring single-sex schools. Certainly, the last point would be true for the more prestigious single-sex schools, both state and private. An indication of this is that about 60 per cent of both state and private single-sex schools have boarding establishments which cater, in part, for rural children from more affluent backgrounds. Other factors favouring the urban schools relate to qualifications of staff and the wider range of courses offered.

A further point worth noting is that many single-sex schools have a very strong tradition of examination success resulting from their earlier establishment which meant that for a long period they were the only available avenue for examination success within their respective districts. Such success tends to build a self perpetuating situation with the result that these schools have tended to attract more able pupils hoping to gain external examinations. Mack's Scholarship results certainly bear this out. What is perhaps more important is the distribution of the total numbers sitting such examinations as Scholarship and the different rates of success in the respective schools. Yet Mack's study considered total numbers gaining Scholarships rather than the relative success rate of the respective schools.

To the extent then that single-sex secondary schools draw upon city-based and higher status populations, one would expect superior academic performance from these schools. Unfortunately, such factors as I.Q. and socio-economic status were not controlled for in Mack's study and it is this deficiency which is its most serious weakness and throws doubt on the validity of his findings on relative academic attainment.

The data on first-year university examination results present an interesting reversal to the findings already discussed. After studying the results at Auckland University over five successive years, Mack found that students from girls' schools achieved better university results than the others, and those from the private girls' schools achieved the best results of all. When the results for the Auckland urban area were considered, however, these showed students from co-educational schools to have superior records on average than state single-sex schools, although not when girls' schools results were taken on their own. There appear to be two main factors contributing to this different pattern. First, the girls on average took fewer units than the boys and consequently had less risk of failure; second, and perhaps most important, a much smaller percentage of girls proceeded to university (less than 25 per cent at the time of Mack's study) and they tended, therefore, to be on average a more highly selected and intelligent group than the boys.

Finally, Mack considered the opinions of teachers and parents about the respective schools. Unfortunately, his sample of teachers was very small, 36 from co-educational schools and 22 from single-sex schools. Mack found that teachers who taught in co-educational schools generally favoured them, whereas the single-sex teachers were much more divided in their opinions, although there was wide agreement about the social and

emotional advantages of co-education. Because of the smallness of the sample these results must be viewed with caution, but the social-emotional evidence is in line with other research in this area. Similarly, the results on the opinions of parents were not sufficiently representative to be really useful as Mack's sample contained only 32 parents with children at single-sex schools as against 558 for co-educational schools. However 40 per cent of the co-educational respondents had themselves attended single-sex schools so that the overall responses of this group are of some interest. On the basis of which type of school best met pupils' needs, Mack found roughly even preferences for academic and sporting activities, but overwhelming preference for co-educational schools as best promoting social and cultural development.

Turning now to the thesis by Bunce (1970). Although concerned mainly with differences in subject choice between boys and girls, some interesting findings related to co-education did emerge from her study. She detected differences between the type of school attended, differences which were most marked at the third form level. Girls in single-sex schools took more languages and girls at co-educational schools took more mathematics and science. Many of these differences appeared to have faded by the fifth form, but there was still a larger number of co-educational girls taking mathematics. Bunce found it diffficult to make generalisations, however, as the policies of individual schools largely determined a pupils's course up to the fifth form.

With regard to subject choice, findings of the ACEP **Report on the Education of Girls** (1972) show a swing towards mathematics and science for girls, although the Report does note that girls at co-educational schools could more often be in a fortunate position as far as mathematics and science are concerned. Girls would also have greater opportunity to take applied mathematics, additional mathematics and technical drawing, subjects usually unavailable in a single-sex girls' school. The Report emphasises, however, that social attitudes and expectations are of much greater significance in determining the subject choices of girls at whatever type of school they attend.

The most recent piece of research into co-education in New Zealand was a study reported by J.C. Jones, J. Shallcrass, and C.C. Dennis (1972), which looked at co-education and adolescent values. The authors tested a hypothesis by J.S. Coleman (1961) that co-education 'may be inimical to both academic achievement and social adjustment', because status in the co-educational secondary school may depend more upon popularity, with greater emphasis on 'rating and dating', than upon academic achievement. Using items from Coleman's questionnaire, the authors obtained some support for Coleman's conclusions, but several qualifications need to be made. First, the study assumed a high degree of comparability among the three schools sampled, two of which were single-sex and one co-educational. While the three schools did draw on broadly similar higher socio-economic communities, there must be some doubt about comparability because socio-economic background was not controlled for. Nor could the effect of other aspects of New Zealand society be allowed for. Why, for example, do parents choose to send their children to single-sex schools? The stated reasons may not always be the real underlying reasons. Schools reflect their societies and it is evident that the continued existence of single-sex schools in New Zealand reflects the high degree of conservatism and male domination within New Zealand society.

The study by Jones et al. also assumed the relevance of questionnaire items prepared for American conditions. But leaving that aside, the reported differences are, in my view, relatively small with similar broad distributions in the variables considered, such as prestige and popularity, peer influences, and self-regard. Moreover, the small numbers who responded to many of the items do not inspire a high degree of confidence in the results. It may well be that the more open environment of the co-educational school, accepting that it is more open, prompted franker responses from the students to the questionnaire items; it is all too easy for respondents to provide what they feel will be the 'right' responses — always a problem in social survey research. It is interesting to note that when the authors went beyond their questionnaire data and conducted individual in-depth interviews in the three schools, the results, not reported in the published study, suggested a healthier and happier environment in the co-educational school. The difficulty with interview responses of this type, however, is that they are almost impossible to quantify.

A similar study on co-education and adolescent values and satisfaction with school was carried out in Australia by N.T. Feather (1974). His findings did not support Coleman's hypothesis concerning possible adverse aspects of co-education, but did offer some support for Dale's suggestion that single-sex schools may be seen as more discipline and control-oriented. The overall results, however, indicated few differences in the way students of either sex, from co-educational or single-sex schools, assigned importance to values.

An indication of the wide general support in New Zealand for co-educational secondary schools was obtained by a Heylen Poll conducted in 1973 on a national random sample of 1000 New Zealanders. The results showed that nearly 80 per cent of the total sample stated that they did not favour single-sex schools, but for the youngest group, 18 to 29 year-olds, the figure was nearly 90 per cent. Even the oldest group, 55 plus, whose upbringing would have been more likely to stress the advantages of single-sex education at the secondary level, recorded only 27 per cent in favour of such schools. Similar strong support for co-education was reported at a local level by a committee set up in Blenheim in 1974 to consider proposals for educational organisation from Form 1. This finding is of considerable interest as it is a reversal of local opinion in 1958 that supported the decision which led to the splitting, in 1963, of the existing co-educational secondary school into two single-sex schools. The Report also cited evidence from a survey during the Educational Development Conference of 350 sixth and seventh form students who examined a number of questions related to a proposed third college in Blenheim. An overwhelming 98 per cent of these students favoured co-education although they themselves had been educated in single-sex schools. There was a strong feeling on the part of this group 'that segregation makes for abnormal relations out of school and that co-educational schools provide a better balanced and

generally happier environment'.

Conclusions

It is clear that it is extremely difficult to make simple statements or draw wholly reliable conclusions about which type of school is better. To do this one must be sure about the criteria upon which such judgements are made. The overseas, mainly English, research does appear to favour co-education on academic grounds, but generally the results do not show a clear-cut advantage one way or the other. Also, the relevance of this research to New Zealand circumstances may be questioned. All that can be said with any certainty is that co-educational secondary schools are certainly not academically disadvantageous, whether here or overseas.

The evidence on the better social and emotional climate of co-educational secondary schools appears stronger and is more consistent. Surveys of opinion nearly all show a strong preference for co-education on social and emotional grounds amongst pupils, teachers and parents. On the part of parents, however, such opinions do not necessarily influence the choice in favour of a co-educational school, especially for their daughters.

The qualifications regarding the research evidence that have been made throughout this paper raise the whole question of the usefulness of sex as a basis for categorizing students in secondary education. There is a need for a much wider sociological setting for any future research and much tighter control of all the relevant variables, with greater emphasis on such factors as the changing roles of women in society and the relation of schools to society. In other words, rather than try to decide what type of school is better on the basis of rather narrow criteria, it appears to me far more important to establish what sort of education society needs to meet the present and future requirements of its youth.

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